50-55

SEMESTER END EXAMINATION, APRIL-MAY, 2025

Course Name: - BPO **Semester:- BPO II[nd] Year**

Paper Name: - Prosthetics Science - II **Paper Code:- BPO 206**

Time - 3 Hrs + 20 minutes per hour extra time for V.I. & examinees with writer. **Max Marks-70**

Additional 30 Minutes for Mid-Test.

Instructions:

- The question paper consists of three sections namely A, B, C. All sections are compulsory.
- Section A- Each question carries **3 mark**. **All questions are compulsory.**
- Section B- Answer any **5 out of 7** given questions. Each question carries **7 marks.**
- Section C- Answer any **2 out of 3** given questions. Each question carries **10 marks.**

Section – A

Objective Questions

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1. Answer all the following questions. **5x3=+15**

1. In prosthetic alignment, placing the knee axis anterior to the lateral weight reference line is intended to achieve which of the following-
   A. Enhanced cosmetic appearance
   B. Voluntary knee control by the user
   C. Automatic knee locking during stance
   D. Increased knee instability during swing phase
2. What is a key characteristic of a polycentric knee mechanism in a prosthetic limb?
   A. It has a single fixed axis of rotation
   B. It provides locking at all angles of flexion
   C. It uses a four-bar linkage to create a changing centre of rotation
   D. It eliminates the need for any control by the user
3. Which of the following is a potential disadvantage of over-tightening a Silesian bandage suspension in a transfemoral prosthesis?
   A. Increased prosthetic foot inversion
   B. Pistoning of the residual limb
   C. Internal rotation of the socket causing groin or ASIS pressure
   D. Loosening of the knee joint mechanism
4. Botta subdivided the socket for a knee disarticulation prosthesis into a soft inner liner and a hard outer socket, the so-called_____
   A. Bucket socket
   B. Container socket
   C. Plug fit socket
   D. ISNY socket
5. _____type of socket controls the socket rotation by containing ischial tuberosity and pubic ramus within the contours of the socket.
   A. IRC
   B. ISNY
   C. Quadrilateral
   D. IC

Section – B (खण्ड–ब)
Short Answer Questions (लघुउत्तरीय प्रश्न)

2. Answer any five of the following questions. **5x7=35**

1. Explain Instantaneous center of rotation (ICOR).
2. Write the suspension systems available for transfemoral amputee.
3. Explain in detail about Modification procedure of above knee (AK) mould.
4. Explain the Single axis knee joint.
5. Notes on Prosthetic Clinical procedure.
6. Prosthetic management for knee disarticulation amputation.
7. Discuss about effects of ill-fitting Transfemoral socket.

Section – C
Descriptive Questions

3. Answer any two of the following question. **2x10=20**

1. Discuss function of four walls of quadrilateral socket. with neat diagrams. Also discuss about biomechanical principles applied in this socket.
2. What are gait deviations. Discuss the common gait deviation if any seen in case of Transfemoral amputees. What are the causes of these deviations, and how can a prosthesis and alignment correct or prevent these deviations?
3. Discuss all the socket design in case of Transfemoral amputee along with diagram. Also discuss in detail about the shapes of the stump.

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